Missouri Department of Natural Resources

PUBLIC NOTICE

DRAFT MISSOURI STATE OPERATING PERMIT

DATE: August 27, 2004

In accordance with the state Clean Water Law, Chapter 644, RSMo, Clean Water Commission regulation 10 CSR 20-6.010, and the federal Clean Water Act, the applicants listed herein have applied for authorization to either discharge to waters of the state or to operate a no-discharge wastewater treatment facility. The proposed permits for these operations are consistent with applicable water quality standards, effluent standards and/or treatment requirements or suitable timetables to meet these requirements (see 10 CSR 20-7.015 and 7.031). All permits will be issued for a period of five years, unless noted otherwise in the Public Notice for that discharge.

On the basis of preliminary staff review and the application of applicable standards and regulations, the Missouri Department of Natural Resources (MDNR), as administrative agent for the Missouri Clean Water Commission, proposes to issue a permit(s) subject to certain effluent limitations, schedules, and special conditions. The proposed determinations are tentative pending public comment.

Persons wishing to comment on the proposed permit conditions are invited to submit them in writing to the Department of Natural Resources, Water Protection Program, P.O. Box 176, Jefferson City, Missouri 65102, ATTN: Peter Goode, P.E., Chief, NPDES Permits and Engineering Section. Please include the permit number in all comment letters.

Comments should be confined to the issues relating to the proposed action and permit(s) and the effect on water quality. The MDNR may not consider as relevant comments or objections to a permit based on issues outside the authority of the Clean Water Commission, (see Curdt v. Mo. Clean Water Commission, 586 S.W.2d 58 Mo. App. 1979).

All comments must be postmarked by September 27, 2004 or received in our office by 5:00 p.m. on September 30, 2004. The requirement of a signed document makes it impossible to accept email comments for consideration at this time. Comments will be considered in the formulation of all final determinations regarding the applications. If response to this notice indicates significant public interest, a public meeting or hearing may be held after due notice for the purpose of receiving public comment on the proposed permit or determination. Public hearings and/or issuance of the permit will be conducted or processed according to 10 CSR 20-6.020.

Copies of all draft permits and other information including copies of applicable regulations are available for inspection and copying at DNR's website, http://www.dnr.state.mo.us/wpscd/wpcp/homewpcp.htm , or at the Department of Natural Resources, Water Protection Program, 205 Jefferson Street, P.O. Box 176, Jefferson City, Missouri 65102, between the hours of 8:00 a.m. and 5:00 p.m., Monday through Friday.

Public Notice Date: August 27, 2004
Permit Number: MO-0100978
St. Louis Regional Office

FACILITY NAME AND ADDRESS	NAME AND ADDRESS OF OWNER
MSD, Lower Meramec WWTF 7981 Fine Road St. Louis, MO 63129	Metropolitan St. Louis Sewer District (MSD) 2350 Market Street St. Louis, MO 63103
RECEIVING STREAM & LEGAL DESCRIPTION	**TYPE OF DISCHARGE**
Unnamed tributary to Meramec River (Meramec River), Sec. 34, T43N, R6E, St. Louis County	Domestic, reissuance

STATE OF MISSOURI

DEPARTMENT OF NATURAL RESOURCES

MISSOURI CLEAN WATER COMMISSION

MISSOURI STATE OPERATING PERMIT

In compliance with the Missouri Clean Water Law, (Chapter 644 R.S. Mo. as amended, hereinafter, the Law), and the Federal Water Pollution Control Act (Public Law 92-500, 92nd Congress) as amended,

Permit No.	MO-0100978
Owner:	Metropolitan St. Louis Sewer District (MSD)
Address:	2350 Market Street, St. Louis, MO 63103
Continuing Authority:	Same as above
Address:	Same as above
Facility Name:	MSD, Lower Meramec Wastewater Treatment Facility
Address:	7981 Fine Road, St. Louis, [illegible]
Legal Description:	SW ¼, SW ¼, Sec. 34, [illegible] R6E, St. Louis County
Latitude/Longitude:	+3824409/-09020324
Receiving Stream:	Unnamed Tributary to Meramec River (U)
First Classified Stream and ID:	Meramec River (1803)
USGS Basin & Sub-watershed No.:	(07[illegible]-04)

DRAFT

is authorized to discharge from the facility described herein, in accordance with the effluent limitations and monitoring requirements as set forth herein:

FACILITY DESCRIPTION

Outfall #001 – POTW – SIC #4952
Two cell aerated lagoon/sludge is retained in lagoon.
Design population equivalent is 35,340.
Design flow is 3.6 MGD.
Actual flow is 3.7 MGD.
Design sludge production is 530 dry tons/year.
Actual flow exceeds design flow.

This permit authorizes only wastewater discharges under the Missouri Clean Water Law and the National Pollutant Discharge Elimination System; it does not apply to other regulated areas. This permit may be appealed in accordance with Section 644.051.6 of the Law.

Effective Date

Stephen M. Mahfood, Director, Department of Natural Resources
Executive Secretary, Clean Water Commission

Expiration Date

Jim Hull, Director of Staff, Clean Water Commission

A. INTERIM EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The interim effluent limitations shall become effective upon issuance and remain in effect until December 31, 2006. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Outfall #001						
Flow	MGD	*		*	aily	24 hr. total
Carbonaceous Biochemical Oxygen Demand**	mg/L		60	0	once/week	grab
Total Suspended Solids**	mg/L		8	60	once/week	grab
pH – Units	SU	**		***	once/weekday	grab
Ammonia, Total****	mg/	14			once/month	grab
Oil & Grease	mg/		20	15	once/month	grab
Fecal Coliform	00m	*		*	once/week	grab
MONITORING REPORTS SHALL BE S MITT MONTHLY; THE FIRST REPORT IS DUE _____.						
Aluminum, Total Recoverable	mg/L	*		*	once/quarter*****	grab
Arsenic, Total Recoverable	mg/L	*		*	once/quarter*****	grab
Cadmium, Total Recoverable	mg/L	*		*	once/quarter*****	grab
Chromium, Total Recoverable	mg/L	*		*	once/quarter*****	grab
Copper, Total Recoverable	mg/L	*		*	once/quarter*****	grab
Iron, Total Recoverable	mg/L	*		*	once/quarter*****	grab
Lead, Total Recoverable	mg/L	*		*	once/quarter*****	grab
Mercury, Total Recoverable	mg/L	*		*	once/quarter*****	grab
Nickel, Total Recoverable	mg/L	*		*	once/quarter*****	grab
Silver, Total Recoverable	mg/L	*		*	once/quarter*****	grab
Zinc, Total Recoverable	mg/L	*		*	once/quarter*****	grab
MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE _____.						
Whole Effluent Toxicity (WET) Test	% Survival	See Special Conditions			once/year	grab
MONITORING REPORTS SHALL BE SUBMITTED ANNUALLY; THE FIRST REPORT IS DUE _____. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						

DRAFT

B. STANDARD CONDITIONS

IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED Parts I & III STANDARD CONDITIONS DATED October 1, 1980 and August 15, 1994, AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.

A. FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective on January 1, 2007, and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Outfall #001 – The wastewater flow shall be removed from this facility by December 31, 2006, and conveyed to the new Meramec Treatment Plant(MO-0127949).						
SLUDGE MONITORING						
Total Solids	%	*		*	******	
Priority Pollutants (Note 1)	mg/kg (dry wt)	*		*	******	
Toxicity Characteristic (Note 2)	mg/L				******	

MONITORING REPORTS SHALL BE SUBMITTED ONCE/5 YEARS; THE REPORT IS DUE October 28, 2007. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

B. STANDARD CONDITIONS

IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED Parts I & III STANDARD CONDITIONS DATED October 1, 1980 and August 15, 1994, AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.

MO 780-0010 (8/91)

DRAFT

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

* Monitoring requirement only.
** This facility is required to meet a removal efficiency of 65% or more.
*** pH is measured in pH units and is not to be averaged. The pH is limited to the range of 6.0-9.0 pH units.
**** The daily maximum ammonia limit shall be 25 mg/L when the Meramec River flow exceeds 518 cubic feet per second (cfs) as measured at Eureka. Daily flow measurements of the Meramec River at Eureka must be provided with the monitoring reports.
***** Sample once per quarter during the months of February, May, August, and November.
****** Monitoring shall be conducted prior to lagoon closure or sludge removal from the lagoon. At a minimum, one composite sample shall be analyzed. The composite sample shall consist of at least one grab sample for each two (2) acre feet of sludge.

Note 1 – Monitoring shall be conducted for the priority pollutants listed under 40 CFR 122.21, Appendix D, Tables II and III.

Note 2 – The toxicity characteristics shall be determined using the Toxicity Characteristic Leaching Procedure (TCLP) in accordance with 40 CFR 261.24. If any contaminants exceed the regulatory level contained in Table 1 of 40 CFR 261.24, the sludge shall be disposed in accordance with Missouri Hazardous Waste Regulations in 10 CSR 25.

C. SPECIAL CONDITIONS

1. Report as no-discharge when a discharge does not occur during the report period.

2. The department has approved the construction permit program to regulate and approve construction of sanitary sewers, which are tributary to this wastewater treatment plant. This approval may be modified or revoked by the department if the sewage collection, transportation, or treatment facilities reach their design limitations, if the facility falls into chronic noncompliance with the permit, or if the permittee fails to follow the terms and conditions of the submitted and approved program.

   This permit may be reopened and modified or alternatively revoked and reissued to incorporate new or modified conditions to the sewer construction permit authority, if information indicates changes are necessary to assure compliance with Missouri's Clean Water Law and associated regulations.

   When any of the above mentioned conditions occur, the permittee will be notified prior to any modifications of this permit condition.

   Plans and specifications for all projects which include a proposed by-pass must be submitted to the Department for review and record information for location and size of the by-pass.

   An annual report of the sewer extension program must be submitted by January 28 of each year to the Missouri Department of Natural Resources' regional office. The report must list the name of the projects approved and the length of sewers and force mains constructed under the sewer extension program. Detailed project information and data including design flows and inspection records shall be available for review upon request. A summary of total flow at the treatment facility shall be included.

3. Permittee shall implement and enforce its approved pretreatment program in accordance with the requirements of 40 CFR Part 403. The approved pretreatment program is hereby incorporated by reference.

4. Whole Effluent Toxicity (WET) tests shall be conducted as follows:

SUMMARY OF WET TESTING FOR THIS PERMIT				
OUTFALL	A.E.C. %	FREQUENCY	SAMPLE TYPE	MONTH
All Outfalls	56%	Annually	grab	March

   a. Test Schedule and Follow-Up Requirements

      (1) Perform a single-dilution test in the months and at the frequency specified above.

      If the effluent passes the test, do not repeat the test until the next test period. Submit results with the annual report.
      If the effluent fails the test, a multiple dilution test shall be performed within 30 days, and biweekly thereafter, until one of the following conditions are met:
      (a) THREE CONSECUTIVE MULTIPLE-DILUTION TESTS PASS. No further tests need to be performed until next regularly scheduled test period.
      (b) A TOTAL OF THREE MULTIPLE-DILUTION TESTS FAIL.

DRAFT

C. SPECIAL CONDITIONS (continued)

(2) The permittee shall submit a summary of all test results for the test series to the WPP, Planning Section, P.O. Box 176, Jefferson City, MO 65102 within 14 days of the third failed test. DNR will contact the permittee with initial guidance on conducting a toxicity identification evaluation (TIE) or toxicity reduction evaluation (TRE). The permittee shall submit a plan for conducting a TIE or TRE to the Planning Section of the WPP within 60 days of the date of DNR's letter. This plan must be approved by DNR before the TIE or TRE is begun. A schedule for completing the TIE or TRE shall be established in the plan approval.

(3) Upon DNR's approval, the TIE/TRE schedule may be modified if toxicity is intermittent during the TIE/TRE investigations. A revised WET test schedule may be established by DNR for this period.

(4) If a previously completed TIE has adequately identified the cause of toxicity, additional TIEs will not be required as long as effluent characteristics remain essentially unchanged, the permittee is proceeding according to a DNR approved schedule to complete a TRE and reduce toxicity. Regularly scheduled WET testing as required in the permit, without the follow-up requirements, shall be required during this period.

(5) In addition to the WET test summary report required in part (2), all failing test results shall be reported to DNR within 14 days of the availability of the results.

(6) All WET test results for the reporting period shall be summarized and submitted to DNR by the end of the following October. When WET test sampling is required to run over one DMR period, each DMR report shall contain information generated during the reporting period.

b. PASS/FAIL procedure and effluent limitations

(1) To pass a single-dilution test, mortality observed in the AEC test concentration shall not be significantly different (at the 95% confidence level; p = 0.05) than that observed in the upstream receiving-water control sample. The appropriate statistical tests of significance will be those outlined in the most current USEPA acute toxicity manual or those specified by the MDNR.

(2) To pass a multiple-dilution test:
   (a) the computed percent effluent at the edge of the zone of initial dilution, Acceptable Effluent Concentration (AEC), must be less than three-tenths (0.3) of the LC_{50} concentration for the most sensitive of the test organisms; or,
   (b) all dilutions equal to or greater than the AEC must be nontoxic. Failure of one multiple-dilution test is an effluent limit violation.

c. Test Conditions

(1) Test species: Ceriodaphnia dubia and Pimephales promelas (fathead minnow). Organisms used in WET testing should come from cultures reared for the purpose of conducting toxicity tests and should be cultured in a manner consistent with the most current USEPA guidelines. All test animals should be cultured as described in EPA-600/4-90/027.

DRAFT

C. SPECIAL CONDITIONS (continued)

4. Whole Effluent Toxicity (WET) tests (continued)

(2) Test period: 48 hours at the "Acceptable Effluent Concentration" (AEC) specified above.

(3) When dilutions are required, upstream receiving stream water shall be used as dilution water. If upstream water is unavailable or if mortality in the upstream water exceeds 10%, "reconstituted" water will be used as dilution water. Procedures for generating reconstituted water will be supplied by the MDNR upon request.

(4) Tests should be initiated immediately after the sample is collected, but tests must be initiated no later than 36 hours after sample collection.

(5) Single-dilution tests will be run with:

(a) Effluent at the AEC concentration;
(b) 100% receiving stream water (if available), collected upstream of the outfall at a point beyond any influence of the effluent; and
(c) reconstituted water.

(6) Multiple-dilution tests will be run with:

(a) 100%, 50%, 25%, 12.5%, and 6.25% effluent, unless the AEC is less than 25% effluent, in which case dilutions will be 4 times the AEC, two times the AEC, AEC, 1/2 AEC and 1/4 AEC;
(b) 100% receiving-stream water (if available), collected upstream of the outfall at a point beyond any influence of the effluent; and
(c) reconstituted water.

(7) If reconstituted-water control mortality for a test species exceeds 10%, the entire test will be rerun.

5. This permit may be reopened and modified, or alternatively revoked and reissued, to:
(a) Comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a) (2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:
(1) contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
(2) controls any pollutant not limited in the permit.
(b) Incorporate new or modified effluent limitations or other conditions, if the result of a waste load allocation study, toxicity test or other information indicates changes are necessary to assure compliance with Missouri's Water Quality Standards.
(c) Incorporate new or modified effluent limitations or other conditions if, as the result of a watershed analysis, a Total Maximum Daily Load (TMDL) limitation is developed for the receiving waters which are currently included in Missouri's list of waters of the state not fully achieving the state's water quality standards, also called the 303(d) list.
The permit as modified or reissued under this paragraph shall also contain any other requirements of the Clean Water Act then applicable.

6. All outfall must be clearly marked in the field.

DRAFT

C. SPECIAL CONDITIONS (continued)

7. Permittee will cease discharge by connection to areawide wastewater treatment system within 90 days of notice of its availability.

8. Changes in Discharges of Toxic Substances

The permittee shall notify the Director as soon as it knows or has reason to believe:
(a) That any activity has occurred or will occur which would result in the discharge of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels:"
(1) One hundred micrograms per liter (100 µg/L);
(2) Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for dinitrophenol and for 2-methyl-4, 6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
(3) Five (5) times the maximum concentration value reported for the pollutant in the permit application;
(4) The level established in Part A of the permit by the Director.
(b) That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant, which was not reported in the permit application.

9. Sludge and Biosolids Use For Domestic Wastewater Treatment Facilities
(a) Permittee shall comply with the pollutant limitations, monitoring, reporting, and other requirements in accordance with the attached permit Standard Conditions.
(b) Permit Standard Conditions, Part III shall apply to the land application of biosolids. Permittee shall notify the department at least 180 days prior to the planned removal of biosolids. The department may require submittal of a biosolids management plan for department review and approval as determined appropriate on a case-by-case basis.

10. General Criteria. The following water quality criteria shall be applicable to all waters of the state at all times including mixing zones. No water contaminant, by itself or in combination with other substances, shall prevent the waters of the state from meeting the following conditions:
(a) Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses;
(b) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses;
(c) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses;
(d) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life;
(e) There shall be no significant human health hazard from incidental contact with the water;
(f) There shall be no acute toxicity to livestock or wildlife watering;
(g) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community;
(h) Waters shall be free from used tires, car bodies, appliances, demolition debris, used vehicles or equipment and solid waste as defined in Missouri's Solid Waste Law, section 260.200, RSMo, except as the use of such materials is specifically permitted pursuant to section 260.200-260.247.

DRAFT

SUMMARY OF TEST METHODOLOGY FOR WHOLE-EFFLUENT TOXICITY TESTS

Whole-effluent-toxicity test required in NPDES permits shall use the following test conditions when performing single or multiple dilution methods. Any future changes in methodology will be supplied to the permittee by the Missouri Department of Natural Resources (MDNR). Unless otherwise specified by MDNR, procedures should be consistent with Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, EPA/600/4-90/027.

Test conditions for Ceriodaphnia dubia:

Test duration:	48 h
Temperature:	25 ± 2°C
Light Quality:	Ambient laborat[illegible]umination
Photoperiod:	16 h light, [illegible] dark
Size of test vessel:	30 mL (mi[illegible]um)
Volume of test solution:	15 mL (mi[illegible])
Age of test organisms:	<2[illegible]old
No. of animals/test vessel:	5
No. of replicates/concentration:	4
No. of organisms/concentration:	20 [illegible]inimum)
Feeding regime:	No[illegible](feed prior to test)
Aeration:	[illegible]e
Dilution water:	Upstream receiving water; if no upstream flow, synthetic water modified to reflect effluent hardness.
Endpoint:	Mortality (Statistically significant difference from upstream receiving water control at p≤ 0.05)
Test acceptability criterion:	90% or greater survival in controls

DRAFT

Test conditions for (Pimephales promelas):

Test duration:	48 h
Temperature:	25 ± 2°C
Light Quality:	Ambient laboratory illumination
Photoperiod:	16 h light/ 8 h dark
Size of test vessel:	250 mL (minimum)
Volume of test solution:	200 mL (minimum)
Age of test organisms:	1-14 days (all same age)
No. of animals/test vessel:	10
No. of replicates/concentration:	4 (minimum) single dilution method 2 (minimum) multiple dilution method
No. of organisms/concentration:	40 (minimum) single dilution method 20 (minimum) multiple dilution method
Feeding regime:	None (feed prior to test)
Aeration:	None, unless DO concentration falls below 4.0 mg/L; rate should not exceed 100 bubbles/min.
Dilution water:	Upstream receiving water; if no upstream flow, synthetic water modified to reflect effluent hardness.
Endpoint:	Mortality (Statistically significant difference from upstream receiving water control at p≤ 0.05)

Test Acceptability criterion: 90% or greater survival in controls

Date of Public Notice: August 27, 2004

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT
FACT SHEET

This Fact Sheet explains the applicable regulations, rational for development of this permit and the public participation process.

NPDES PERMIT NUMBER: MO-0100978

FACILITY NAME: MSD, Lower Meramec Wastewater Treatment Facility
7981 Fine Road, St. Louis, MO 63129

OWNER NAME: Metropolitan St. Louis Sewer District
2350 Market Street, St. Louis, MO 63103

LOCATION: SW 1/4, SW 1/4, Section 34, T[illegible], St. Louis County

RECEIVING STREAM: Unnamed tributary to M[illegible]c Ri[illegible]

FACILITY CONTACT PERSON: Mr. Todd Heller, TELE[illegible] (636) 861-6700

DRAFT

FACILITY DESCRIPTION AND RATIONAL

The Metropolitan St. Louis Sewer Dis[illegible] applied for reissuance of Missouri State Operating Permit, MO-0100978[illegible] the Lower Meramec Wastewater Treatment Facility. This facility treats domestic a[illegible] indu[illegible]ial wastewater and discharges to an unnamed tributary of the Meramec River. This facil[illegible] is a two cell aerated lagoon designed to treat the wastewater from a population equivalent of 35,340, with an average daily discharge of 3.6 million gallons per day. Actual flow has averaged 3.7 million gallons per day, based on flow records from January 2001 through December 2001. Recent modifications at the facility include removing one of the previous 3 lagoon cells from service and reworking the aeration diffusion equipment. Sludge from the closed lagoon cell has been disposed in sanitary landfills and land applied in St. Charles County. The cell closure was necessary for construction of a new sewage treatment plant to be built at the site. Closure of the cell resulted in a reduction in the capacity of the treatment facility.

The proposed permit contains interim effluent limitations similiar to the current permit. The wastewater flow is to be taken off this plant by December 31, 2006, and conveyed to the new Meramec Wastewater Treatment Facility now under construction. The main outfall from the new plant (#001) will discharge to the Mississippi River.

This permit will be issued for a period of five years.

Missouri Department of Natural Resource
Water Pollution Control Program
Planning Section

Water Quality Review Sheet

Determination of Preconstruction Effluent Limits

Facility Information

FACILITY NAME: Lower Meramec WWTF NPDES #: MO-0100978

FACILITY TYPE/DESCRIPTION: Three-cell aerated lagoon

ECOREGION: Ozark Highlands (Central Irregular Plains, Mississippi Alluvial Plains) 8- DIGIT HUC: 07140102 (Osage Plains, Ozark Highlands) COUNTY: St. Louis

LEGAL DESCRIPTION: SE ¼, SW ¼, Sec. 34, T43N, R6E LATITUDE/LONGITUDE: 38.41208/-90.33939

WATER QUALITY HISTORY: Since 1996, there have been twelve minor viol[illegible]s of effluent standards, which included CBOD, ammonia nitrogen, oil [illegible]ase & total suspended solids.

DRAFT

Outfall Characteristics

OUTFALL	DESIGN FLOW (CFS)	TREATMENT TYPE	RECEIVING WATERBODY	OTHER
001	6.189	3 cell aerated lagoo[illegible]	Tr[illegible]ary to Meramec River	

Receiving Waterbody Information

WATERBODY	CLASS	7Q10 (CFS)	DESIGNATED USES	OTHER CHARACTERISTICS
Meramec River	P	200	[illegible]WW, [illegible]AQL, [illegible]F, WBC, BTG, DWS, IND	

*Cool Water Fishery (CLF), Cold Water Fi[illegible]y (C[illegible] (IRR), Industrial (IND), Boating & Canoeing (BTG), Drinking W[illegible]ly [illegible], Whole Body Contact Recreation (WBC), Protection of Warmwater Aquatic [illegible]nd [illegible] He[illegible] (AQL), Livestock & Wildlife Watering (LWW)

COMMENTS: Discharge from ou[illegible]ll [illegible]ses through slough and lake with long retention time, then unclassified tribu[illegible]o Meramec, ~ 1/3 mi.

The 7Q10 of the low[illegible] Meramec, previously set at 280 CFS, is reduced to 200 CFS due to water uptake by drinking water suppliers.

This section of the Meramec is classified for whole body contact, therefore a disinfection system would normally be required. However, bacteria dispersal into the river may be mitigated by the wetlands.

MIXING CONSIDERATIONS

Mixing Zone: 200 cfs * 0.25 = 50 cfs. Dilution factor: (6.2 cfs + 50 cfs)/6.2 cfs = 9.06.

Zone of Initial Dilution (Z.I.D.): 50 cfs * 0.1 = 5 cfs. Dilution factor: (6.2 cfs + 5 cfs)/6.2 cfs = 1.8.

Permit Limits And Information

TMDL WATERSHED: (Y OR N) [Y] W.L.A. STUDY CONDUCTED: (Y OR N) [Y] DISINFECTION REQUIRED: (Y OR N) [Y] DISINFECTION WAIVER: (Y, N, NA) [N]

OUTFALL# 001

WET TEST (Y OR N): [Y] FREQUENCY: Once/year A.E.C. 56% LIMIT: No significant mortality

PARAMETER	MAXIMUM DAILY LIMIT	AVERAGE MONTHLY LIMIT	MONITORING FREQUENCY	SAMPLE TYPE
Flow (MGD)	*	*	Daily	24-HOUR TOTAL
Temperature	*	*	DAILY	GRAB
Carbonaceous BOD (mg/l)	60 (weekly avg)	40	WEEKLY	GRAB
Total Suspended Solids (mg/l)	80 (weekly avg)	60	WEEKLY	24-HOUR COMPOSITE
pH (SU)	6-9		DAILY	GRAB

NH_3-N (mg/l) [1]	14		WEEKLY	24-HOUR COMPOSITE
NH_3-N (mg/l) [2]	25		WEEKLY	24-HOUR COMPOSITE
Oil & Grease	20 (weekly avg)	15	WEEKLY	GRAB
Fecal Coliform	1000	400	WEEKLY	GRAB
Ag (ug/l)	*		QUARTERLY	GRAB
Al (ug/l)	*		QUARTERLY	GRAB
As (ug/l)	*		QUARTERLY	GRAB
Cd (ug/l)	*		QUARTERLY	GRAB
Cr (ug/l)	*		QUARTERLY	GRAB
Cu (ug/l)	*		QUARTERLY	GRAB
Fe (ug/l)	*		QUARTERLY	GRAB
Hg (ug/l)	*		QUARTERLY	GRAB
Ni (ug/l)	*		QUARTERLY	GRAB
Pb (ug/l)	*		QUARTERLY	GRAB
Zn (ug/l)	*		QUARTERLY	GRAB

[1] Applies when Meramec River flow < 518 cfs
[2] Applies when Meramec River flow > 518 cfs

Receiving Water Monitoring Requirements

Site 1. Immediately upstream of confluence

PARAMETER(S)	SAMPLING FREQUENCY	SAMPLE TYPE	LOCATION
BOD5, Temperature, pH, ammonia-nitrogen, hardness, D.O., Total Nitrogen, Total Phosphorus, Fecal Coliform, dissolved aluminum, dissolved lead	Quarterly		ne[illegible]E corner, Sec 4, T42N R6E; Imm[illegible]iately upstream from mouth of [illegible]ibutary to Meramec. If inaccessible, then sample at hwy 231 bridge

Site 2. Downstream [illegible]ue

PARAMETER(S)	[illegible]PLING [illegible]QUENCY	SAMPLE TYPE	LOCATION
BOD5, Temperature, pH, ammonia-nitrogen, hardness, D.O., Total Nitrogen, Total Phosphorus, Fecal Coliform, dissolved aluminum, dissolved lead	[illegible]Quarterly	Grab	950 ft upstream from railroad bridge, near SW corner Sec 3, T42N R6E; If inaccessible, sample from near railroad bridge. (Does MSD have a boat?)

DRAFT

Derivation and Discussion of Limits

CBOD and TSS: Limits on expired permit are satisfactory.

Fecal Coliform: Subject to change if upstream and downstream data indicate significant increase from lagoon.

pH: 10CSR 20-7.015 (8) (B) 2

NH3-N: Warm weather chronic toxicity criteria; 1.2 mg/l (chronic) + 0.125 mg/l (decay) = 1.325 mg/l.

1.325 mg/l * 9.06 = 12 mg/l

Cool weather chronic toxicity criteria; 2.0 mg/l (chronic) + 0.125 mg/l (decay) = 2.325 mg/l.

2.325 mg/l * 9.06 = 21 mg/l

These calculated limits are lower than what is in the expired permit. A review of DMRs indicates that adherence to these limits is unlikely. However, impact on the Meramec River is expected to be mitigated by filtration of effluent through the wetland area. Therefore, the established limits may remain. This may be subject to change based on instream monitoring results.

Oil & Grease: Limits on expired permit are satisfactory.

Reviewer: Mark Osborn, Chris Zell
Date: 2/13/2002
Unit Chief: Mohsen Dkhili